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# The State of the Oral Cavity in Diabetes Mellitus with Concomitant Chronic Kidney Disease as A Medical and Social Problem

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**RELEVANCE**

*Therefore, dental rehabilitation is of great importance for patients with type 2 diabetes mellitus with chronic kidney diseases.*

*Researchers in many countries emphasize that patients with type 2 diabetes mellitus with impaired kidney function are found mainly among the most able-bodied people of mature age, which proves a huge social and economic burden on the state budget of many countries. However, the issues of the psychological status of patients with type 2 diabetes mellitus with chronic kidney diseases, the degree of motivation for dental rehabilitation, the level of dental morbidity and its structure at the stages of treatment of the underlying disease have not yet been resolved at the global level. Methodological approaches to the assessment of dental risk factors and the algorithm of dental treatment of these patients have not been fully developed.*

**KEYWORDS:** *Diabetes Mellitus, Oral Cavity, Kidney Disease, Social Problem.*

It should be emphasized that CKD is not a highly specialized, "nephrological" problem, but a problem of medicine in general, which requires the efforts of not only endocrinologists, nephrologists, but other medical specialties, including dentists (de Portu S. et al., 2011).

According to official data, today in the Russian Federation, 14 million people have verified this diagnosis (Shalyagin Yu.D. et al., 2011). It was revealed that tens of thousands of patients living in the Russian Federation die annually from complications of CKD (Mukhin H.A., 2010), and 41.5 thousand people of working age are recognized as disabled due to these ailments in the Russian Federation (Tomilina H.A., 2008; Shilov E.M., 2011).

In our country, the number of patients with diabetes registered in the relevant dispensaries is more than 245 thousand people, of whom 185,336 suffer from type 2 diabetes. Studies have found that half of them suffer from concomitant diseases that occur with impaired kidney function. In endocrinological patients, up to 40% of cases develop diabetic nephropathy, which will lead to end-stage renal failure (Sigitova O.N., 2011).

The conducted studies have proved that currently the treatment of patients with type 2 diabetes complicated by CKD is one of the main problems not only of modern endocrinology, but also of dentistry (Galimova A.Z., 2012).

The development of atrophic processes and pathological conditions in the oral cavity in patients suffering from type 2 diabetes with complicated CKD aggravates their adaptation to orthopedic interventions in the oral cavity. This fact reflects not only the loss of dental health, but also affects the quality of life of the patient (Galimova A.Z. 2012).

It has been established that orthopedic treatment may not always be effective in patients with type 2 diabetes and CKD. To reduce the frequency of complications when using full or partial removable plate prostheses, it is necessary to take into account the features of the qualitative and quantitative

microbial composition of the oral cavity, as well as the state of local factors of nonspecific resistance during the adaptation period in patients with type 2 diabetes complicated by CKD. Consequently, this can lead to prolonged adaptation of prostheses in this contingent of patients and exacerbation of complications (hygienic index according to Fedorov - Volodkina).

The purpose of the study. Comprehensive assessment of the dental status of patients with type 2 diabetes mellitus depending on renal dysfunction and development of dental rehabilitation measures.

**Objectives of the study:**

to determine pathological changes in the oral mucosa in patients with diabetes mellitus 2 complicated by renal dysfunction;

to determine and evaluate the indicators of nonspecific protection factors and microbial landscape in patients with type 2 diabetes mellitus complicated by renal dysfunction;

to study the microcirculatory system of the oral mucosa in this category of patients;

to conduct a comparative assessment of the effectiveness of treatment before and after. orthopedic treatment with removable plate prostheses in patients with type 2 diabetes mellitus complicated by renal dysfunction;

In the introduction, the relevance and relevance of the topic of the dissertation is substantiated, the goals and objectives, the object and subject of research are formulated, the correspondence of research to the priority directions of the development of science and technology of the Republic of Uzbekistan is given, the scientific novelty and practical results of research are outlined, the theoretical and practical significance of the results obtained is disclosed, the reliability of data is substantiated, information on the implementation of research results in practice is given, published works and the structure of the dissertation.

The study included 102 adult patients with type 2 diabetes with complicated and uncomplicated CKD, as well as 30 healthy individuals who had not been diagnosed with diabetes mellitus and kidney disease (control group). The patients were with partial and complete secondary adentia, among the patients there were 54 men (52.9%), 48 women (47.1%). Among healthy individuals included in the control group, there were 17 men (56.7%) and 13 women (43.3%). Diagnoses were verified on the basis of the International Classification of Diseases of the 10th Revision (ICD-10) by endocrinologists and nephrologists in accordance with WHO clinical and laboratory criteria (1999). All studies were conducted on the basis of the Bukhara Regional Multidisciplinary Medical Center, the dental center of the Bukhara State Medical Institute and the clinic of the Tashkent State Dental Institute.

X-ray-densitometric method. In the course of the study, an analysis of X-ray diagnostics was carried out with the determination of bone density according to digital orthopantomograms. X-ray examinations were performed on the Orthophos XG 3 DS device (manufactured in Germany). A total of 89 orthopantomograms were studied: 46 without destructive processes in the bone tissue of the jaws and 43 orthopantomograms with destructive processes in the bone tissue of the jaws. When studying orthopantomograms, bone density was determined in the area of the incisors of the lower jaw (anterior jaw) and in the area of the molars of the lower jaw (distal jaw).

Laser Doppler flowmetry. Studies of microcirculatory disorders of the SOPR were carried out by the functional method of laser Doppler flowmetry (LDF) using the LAKK-1 device (manufactured in the Russian Federation). The changes resulted in a peripheral fibrous zone along the Lund. This method allows non-invasively measuring the amount of tissue perfusion with blood, that is, determining the amount of red blood cell flow in the volume of tissue probed by laser radiation, a method that allows diagnosing microcirculation disorders and differentiating the nature of these changes in periodontal

tissues. Spectral decomposition of the LDF gram into harmonic components of tissue blood flow oscillations allows differentiating various rhythmic components of flaxmotion, which is important for the diagnosis of tissue blood flow modulations. The device provides the determination of capillary blood flow in the range from 0.03 mm/s to 6 mm/s.

Study of saliva lysozyme and sIgA. Lysozyme activity in saliva was determined using the method of Aliyev S.R. (1994), lysozyme activity in saliva was determined by the method of diffusion in agar.

Secretory immunoglobulin A (sIgA) in the saliva of the examined patients was determined by radial immunodiffusion according to Mancini (1964).

Microbiological research methods. Microbiological studies were carried out before and after prosthetics. To do this, oral fluid was collected in sterile dishes. Serial dilutions were prepared from the obtained material in the laboratory, and subsequently a certain amount of them was sown on solid nutrient media corresponding to the type of microorganism. Identification and differentiation of microorganisms was carried out according to Bergy's Manual Microbiology (1997).

The results of the studies were processed by statistical methods generally accepted for biomedical research by Student and Fisher. The arithmetic mean number (M), the error of the average number (m), and the confidence criterion (t) were determined. All studies were carried out on a personal computer using special programs for biomedical research. When organizing and conducting research, the principles of evidence-based medicine were observed.

Thus, based on the results obtained, it can be said that the use of the antiseptic drug "LOROBEN" in the process of adaptation to removable plate dentofacial orthopedic prostheses in patients with type 2 diabetes complicated by CKD differed in its effectiveness from traditional methods of orthopedic dental therapy.

**CONCLUSIONS.** In people suffering from type 2 diabetes complicated by CKD with a satisfactory level of dental care, compared with the group of patients with type 2 diabetes without complications of CKD and persons in the control group, the incidence of non-carious lesions increases (93%, 86%, 40%, respectively) and the need for prosthetics (90%). Patients suffering from type 2 diabetes with complicated CKD and uncomplicated CKD more often complained of xerostomia (96% and 76%), taste perversion (30% and 26%), bleeding gums (86% and 63%), stomalgia (36% and 23%). Inflammatory periodontal diseases accounted for 73.9%, 79.6% of patients had secondary adentia. It has been established that patients with type 2 diabetes complicated by CKD need active dental treatment and orthopedic care.

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